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Erapol ESA83A

POLYETHER (PTMEG) TDI PREPOLYMER

TECHNICAL DATASHEET

Erapol ESA83A is a liquid isocyanate terminated pre-polymer based on PTMEG polyol.

Polymers made from Erapol ESA83A exhibit outstanding resilience, low hysteresis and heat build up as well as excellent hydrolysis resistance.

Application

Erapol ESA83A has a high resilience and is suitable for mining applications, particularly in slurry applications such as pipelining, pump impellers, floatation equipment etc.

Erapol ESA83A elastomers show excellent low temperature resistance, making them suitable for applications involving service temperatures below 0°C (up to - 60°C), e.g. wheels and tyres.

Product Specification

% NCO	3.10 ± 0.20
Specific Gravity at 25°C	1.05
Viscosity at 80°C (cps)	1000 - 1500
Colour	Clear, light amber

Mixing and Curing Conditions

		ESA83A/MOCA	ESA83A/Ethacure 300	ESA83A/Eracure 110
Erapol ESA83A	(pph)	100	100	100
MOCA Level	(pph)	10.0	-	-
Ethacure 300 Level	(pph)	-	8.0	-
Eracure 110 Level	(pph)	-	-	8.4
Recommended % Theory		100	100	100
Erapol Temperature	(°C)	75 - 85	65 - 75	65 - 75
Curative Temperature	(°C)	110 - 120	20 - 30	20 - 30
Pot Life	(mins)	15	12	10
Demould Time at 100°C	(hrs)	1	1	2 - 4
Post Cure Time at 100°C	(hrs)	16	16	16



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Physical Properties

Properties presented below are to be used as a guide and not intended for specification purposes.

		ESA83A/MOCA	ESA83A/E300*	ESA83A/E110**	TEST METHOD
Hardness	(Shore A)	83 ± 3	83 ± 3	80 ± 3	ASTM D2240
Tensile Strength	MPa (psi)	33.0 (4786)	32.0 (4641)	32.0 (4641)	ASTM D412
100% Modulus	MPa (psi)	4.6 (667)	4.6 (667)	4.8 (696)	ASTM D412
300% Modulus	MPa (psi)	8.3 (1204)	6.9 (1001)	8.0 (1160)	ASTM D412
Angle Tear Strength, Die C	(kN/m)	72	65	69	ASTM D624
Trouser Tear Strength	(kN/m)	27	24	22	AS1683.12
Elongation	(%)	550	450	545	ASTM D412
DIN Resilience	(%)	62	61	62	DIN 53512
DIN Abrasion Resistance 10N	(mm ³)	35	41	21	ASTM D5963
DIN Abrasion Resistance 5N	(mm ³)	12	18	10	ASTM D5963
Compression Set / 22 hr at 70°C	(%)	28	40	-	ASTM D395
Cured Specific Gravity	(g/cm ³)	1.08	1.08	1.10	ASTM D1817

Please note * Ethacure 300

** Eracure 110

Processing Procedure

1. Erapol ESA83A should be heated to 80 ± 5°C and thoroughly degassed at -95 kpa of vacuum until excessive foaming stops.
2. The curative should be added to **ESA83A**, the MOCA must first be melted at 110 - 120°C prior to mixing and Ethacure 300/Eracure 110 processed at room temperature. After adding the curative, mix thoroughly, being careful not to introduce air into the mixture.
3. Pour mixed materials into moulds that have been preheated to 80 - 100°C and pre-coated with release agent.

Adhesion

Adhesion of Erapol based elastomers to various substrates is at best marginal if a primer is not used. Please consult Era Polymers for specific recommendations to improve adhesion.

Handling Precautions

Erapol ESA83A contains small amounts of free TDI. Therefore the product should be used in well-ventilated areas. Avoid breathing in vapours and protect skin and eyes from contact.

In case of skin contact, immediately remove excess, wash with soap and water. For eye contact, immediately flush with water for at least 15 minutes. Call a physician.

If nose, throat or lungs become irritated from breathing in vapours, remove exposed person to fresh air. Call a physician.



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